

Common Course Outline
CHEM 108
Fundamentals of Chemistry Laboratory
1 Credit

The Community College of Baltimore County

Description

CHEM 108 – 1 credit – Fundamentals of Chemistry Laboratory serves as a lab course to accompany CHEM 107 and as a prerequisite to CHEM 121 and CHEM 146; examines how to make and record accurate observations and measurements in an investigative lab setting. Concurrent enrollment in or successful completion with a C or better of CHEM 108.

1 Credit : 3 laboratory hours

Co-requisite: CHEM 107

Overall Course Objectives

Upon completion of this course students will be able to:

1. make and record accurate observations and measurements in an investigative laboratory setting;
2. perform various tasks in a safe and accurate manner, using standard laboratory equipment such as the lab burner, electronic balance, thermometer, metric ruler, buret, graduated cylinder, volumetric pipet, and filtration apparatus;
3. apply the principles of the scientific method to critically analyze and evaluate new information;
4. prepare and use a calibration graph;
5. find, evaluate, and cite appropriate academic resources and technology, including print and digital media, to gather physical and chemical data;
6. perform the necessary calculations to interpret the numerical data obtained;
7. interpret data and analyze results in order to obtain meaningful conclusions about the world around us;
8. work independently and cooperatively in laboratory activities;
9. communicate the results of laboratory investigations orally and in writing in a thorough and accurate manner;
10. explain the effect of chemistry on individuals and diverse societies and on the world around us; and
11. apply western standards of academic and scientific integrity to chemistry.

Major Topics

- I. Measurement
- II. Exploration using the Scientific Method

- III. Physical Properties of Matter
- IV. Separation and Identification of Components of a Mixture
- V. Chemical Reactions
- VI. Geometric Structure of Molecules: Molecular Models
- VII. Acid-Base Titration
- VIII. Global Developments in Chemistry

Course Requirements

Students are required to utilize appropriate academic resources.

Grading/exams

- Weekly experiments each requiring a laboratory report assignment (a minimum of 2 formal laboratory reports and the rest being informal laboratory reports)
- A cumulative laboratory final exam
- A maximum of 3% of the final grade for extra credit points

Writing: This companion lab supplements CHEM 107: Fundamentals of Chemistry. CHEM 107 infuses the CCBC General Education Program Outcomes into the course. The formal assessment of those outcomes occurs in the requisite lecture course.

Other Course Information

This course with CHEM 107 may be used to fulfill 4 credits of the General Education requirement in Biological and Physical Sciences.